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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/706,546
Filing Date: November 12, 2003
Appellant(s): RUSSELL ET AL.

Hunter E. Webb
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/17/2008ealing from the Office action mailed 11/1/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2005/0055369	Gorelik et al.	3-2005

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Gorelik et al. ('Gorelik' hereinafter) U.S. Patent Application 2005/0055369 A1.

With respect to claim 1, Gorelik teaches a computer-implemented method for mapping a user data schema to a mining model schema, comprising:

matching columns of the user data schema to corresponding columns of the mining model schema ([0031, 0058, 0118]) to provide a mapping (abstract, [0015] and [0198]) by performing a number of unique types ([0370]-0383]) of matching processes [0536] in sequence until a match is found, ([0055] and 606 of figure 6) wherein at least one of the number of unique matching process does not utilize an external matching resource (metadata index; [0205]);

determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema (binding; [0048] and correlation [0052]);

transforming the data within the matching columns of the user data schema if the data type is determined to be different (transformation function ([0059], type conversion rules [0237], and transformation discovery [0048-0052]); and

updating a matching resource based on the mapping (updating the metadata index [0221]).

With respect to claims 2, 17, and 25, Gorelik teaches providing an opportunity to manually alter the mapping after transforming the data ([0159-0160]); and

presenting a final view of the mapping after providing the opportunity, wherein the updating step is performed after the final view is presented (figures 7A-7B).

Claims 17 and 25 are essentially similar to claim 2 and therefore are rejected for the same rationale.

With respect to claims 3, 10, 18, and 26, Gorelik teaches determining whether names of the columns of the user data schema exactly match names of the columns of the mining model data schema (absolute match [0055]).

Claims 10, 18, and 26 are essentially similar to claim 3 and therefore are rejected for the same rationale.

With respect to claims 4, 11, 19, and 27, Gorelik teaches determining whether the names of the columns of the user data schema are similar to the names of the

columns of the mining model data schema based on the matching resource ([0198]-[0206]).

Claims 11, 19, and 27 are essentially similar to claim 4 and therefore are rejected for the same rationale.

With respect to claims 5, 12, 20, and 28, Gorelik teaches determining whether the names of the columns of the user data schema match the names of the columns of the mining model schema based on one or more formulae (table 1 of page 9 and [0210] to at least [0220].

Claims 12, 20, and 28 are essentially similar to claim 5 and therefore are rejected for the same rationale.

With respect to claims 6, 13, 21, and 29, Gorelik teaches determining whether the data within the columns of the user data schema corresponds to the data within the columns of the mining model data schema (corresponding values [0052]-[0053]).

Claims 13, 21, and 29 are essentially similar to claim 6and therefore are rejected for the same rationale.

With respect to claims 7, 14, 22, 30, Gorelik teaches the matching resource is selected from the group consisting of a thesaurus, a dictionary and a similarity threshold (metadata index [0205] and Correlation Threshold [0102)].

Claims 14, 22, and 30 are essentially similar to claim 7 and therefore are rejected for the same rationale.

With respect to claims 8, 15, 23, and 31, Gorelik teaches populating a schema consolidation table with names of the columns of the mining model schema, prior to the matching step (Value Match Table [0094]-[0095]); and

updating the schema consolidation table with names of the matching columns of the user data schema, during the updating step (pseudocode after [0094]).

Claims 15, 23, and 31 are essentially similar to claim 8 and therefore are rejected for the same rationale.

With respect to claim 9, Gorelik teaches A computer-implemented method for mapping a user data schema to a mining model schema, comprising:

populating a schema consolidation table with names of columns of the mining modeled schema ([0031], VMT [0094]-[0095] and figures 7A-B);

mapping the user data schema to the mining model schema by matching columns of the user data schema to corresponding columns of the mining model schema ([0031, 0058, 0118]) to provide a mapping (abstract, [0015] and [0198]) by performing a number of unique types ([0370]-0383]) of matching processes [0536] in sequence until a match is found ([0055] and 606 of figure 6), wherein at least one of the number of unique matching process does not utilize an external matching resource (metadata index; [0205]);

determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema (binding; [0048] and correlation [0052]);

transforming the data within the matching columns of the user data schema if the data type is determined to be different (transformation function (transformation function ([0059], type conversion rules [0237], and transformation discovery [0048-0052]); and

providing an opportunity to manually alter the mapping after transforming the data ([0159-0160] and figure 7A-B);

presenting a final view of the mapping after providing the opportunity to manually alter the mapping (figure 7B); and

updating a matching resource and the schema consolidation table based on the mapping (updating the metadata index [0221] and figures 7A-C).

With respect to claim 16, Gorelik teaches A computerized system for mapping a user data schema to a mining model schema, comprising:

a processor ([0028]); and

a memory ([0540]), the memory including:

a column matching system for matching columns of the user data schema to corresponding columns of the mining model schema ([0031, 0058, 0118]) to provide a mapping (abstract, [0015] and [0198]);

a model differentiation system for determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema (binding; [0048] and correlation [0052]) by performing a number of unique types ([0370]-0383]) of matching processes [0536] in sequence until a match is found ([0055] and 606 of figure 6), wherein at least

one of the number of matching processes does not utilize an external matching resource (metadata index; [0205]);

a data transformation system for transforming the data within the matching columns of the user data schema if the data type is determined to be different ([0059], type conversion rules [0237], and transformation discovery [0048-0052]); and

an update system for updating a matching resource based on the mapping (updating the metadata index [0221]).

With respect to claim 24, Gorelik teaches A program product stored on a recordable medium for mapping a user data schema to a mining model schema, which when executed, comprises:

program code for matching columns of the user data schema to corresponding columns of the mining model schema to provide a mapping ([0031, 0058, 0118]) to provide a mapping (abstract, [0015] and [0198]) by performing a number of unique types ([0370]-0383]) of matching processes [0536] in sequence until a match is found ([0055] and 606 of figure 6 described on page 15), wherein at least one of the number of matching processes does not utilize an external matching resource (metadata index; [0205]);

program code for determining whether data within matching columns of the user data schema has a data type different than data within the corresponding columns of the mining model schema (binding; [0048] and correlation [0052]);

program code for transforming the data within the matching columns of the user data schema if the data type is determined to be different ([0059], type conversion rules [0237], and transformation discovery [0048-0052]); and

program code for updating a matching resource based on the mapping (updating the metadata index [0221]).

(10) Response to Argument

Appellant's arguments filed in the Appeal Brief (herein "Brief") dated 04/17/2008 have been fully considered but they are not persuasive.

Specifically, Appellant argues (last paragraph of page 5 to the top of page 6 of the Brief) that the Gorelik reference does not teach a number of unique types of matching processes performed in sequence until a column match is found as recited in claim 1 and similarly claims 9, 16, and 24. The Examiner respectfully disagrees given the following:

As was cited in the previous Final Office Action (herein 'Action' dated 11/01/2007), Gorelik was cited as teaching the above limitation in paragraphs 0370-0383 as well as paragraphs 0536, 0055, and figure 6 (see page 3 of the Action). Therefore, in these citations, Gorelik is seen to teach and describe at least the claimed feature of "performing a number of unique types of matching processes in sequence until a match is found…"

Specifically, paragraph 0371 in Gorelik teaches a transformation discovery process that is used in finding the correlation between columns of one schema (source schema) to columns of another schema (target schema)[1]. To find a correlation between these columns, Gorelik uses several matching techniques that equate to at least some, if not all, of what the Appellant defines as a number of unique types of matching processes. For example, Appellant's disclosure (at paragraphs (0028-0032) identifies the possible types matching processes performed. That is, the Appellant describes a four step matching process (paragraph 0028, page 11) including matching processes such as finding exact column name matches (top of page 12 before paragraph 0029), a fuzzy and/or synonym search to find "similar" matches (beginning of 0029, page 12), a formula-based matching process (0030, page 13), and an instance-based matching process (beginning of 0031, page 14) that focuses on actual data values.

In light of the above portions of the Appellant's disclosure, Gorelik is seen to teach the claimed "performing a number of unique types of matching processes". As construed, the "a number of unique types" claim language broadly defines the claim as requiring two (and possibly more) matching processes in sequence until a match is found.

Gorelik teaches at least one matching process in the approach to finding binding conditions (i.e. attempting to find a match (Gorelik, 0048) between columns (of a schema) starting at paragraph 0060. For instance, Gorelik teaches performing value

[1] In Gorelik's paragraph 0031, schemas are described as being normalized into data objects with attributes (columns) for use in schema mapping (also in paragraphs 0197-0199 and 0029, schema mapping is disclosed).

matching (0069) wherein a correlation between data sources (i.e. source and target with columns, Gorelik at 0086-0087) is determined through data analysis and statistics. Therein, the value matching process corresponds to Appellant's fuzzy matching process (Appellant's specification paragraph 0029) using a similarity threshold. Likewise, the statistics used in Gorelik's value matching with statistics uses a correlation threshold (e.g. paragraph 0102, Gorelik) to determine binding (matching) conditions. Furthermore, and as another example of Gorelik teaching a matching process is found in paragraph 0206-0209 wherein Gorelik uses a metadata index as a schema-mapping tool that contains a list of synonyms for determining a relevance score for a given word.

Gorelik also teaches a second (unique) type of matching process. That is, after the value matching (0069, Gorelik) Gorelik then uses bound matching (0072) to find correlations between sources (columns).

Thirdly as another matching process for providing a mapping, Gorelik describes in an automated method (0081), finding exact matches. Specifically, in the automated process, Gorelik teaches having rules to find identical values in two columns (0087, Gorelik). Therein, with exact matching, Gorelik teaches another (unique) matching process.

With the above noted matching processes, Gorelik then teaches once finding the correlating data (between columns) and binding conditions, then a transformation function is applied to transform the matching data (Gorelik 0059). Specifically, Gorelik teaches given a binding condition and a correlation between one or more source columns and a target column, a transformation is discovered to generate the target

column value from the source column value (Gorelik, 0371). In other words, the Examiner submits that once a match (or correlation) is found using the matching processes noted above (paragraphs 0069, 0072, and 0087 of the approach for mapping data sources, or columns of data sources), a transformation function is then applied to generate target values.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/ROBERT TIMBLIN/

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